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Title : FUSED ARRAY ANTENNA

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2.CLAIMS

(1) A fused array antenna comprising:

converting means for converting respective radio signals,
which are received by a plurality of antenna elements, into
10 signals having predetermined phase differences each other;
and

beam direction controlling means for changing the phases
of the signals, respectively, which are transmitted by said
converting means so as to obtain a predetermined beam direction
15 by the array antenna, adding the signals after they are changed
and transmitting them as a synthetic signal;

wherein said fused array antenna further comprising:

a fixed station portion oscillating portion for
oscillating signals with fixed frequencies having
20 predetermined phase differences each other and transmitting
said signals to said converting means; and

carrier wave phase correcting means for correcting the
phases of the signals, which are transmitted by said beam
direction controlling means.

25 (2) A fused array antenna according to claim 1;

wherein said carrier wave phase correcting means comprises phase shift means for shifting a phase of a signal which is transmitted from said beam direction controlling means by a local area oscillating signal;

5 multiplication means for multiplying respective output signals of said phase shift means, which are transmitted to the outside of the apparatus as a demodulation signal; and

 correcting means for reproducing a carrier wave phase correcting signal having the same phase as the phase of the
10 signal which is supplied from said beam direction controlling means on the basis of the signal which is transmitted by said multiplication means and transmitting this carrier wave phase correcting signal to said phase shift means as a local area oscillating signal.

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FIG. 1 is a block diagram for illustrating a constitution of an embodiment of a fused array antenna according to the present invention.

20 FIG. 1

11: ANTENNA ELEMENT, 13: MIXER, 17: A/D CONVERSION, 20: LOCAL
AREA OSCILLATION, 21: ANTENNA ELEMENT, 23: MIXER, 27: A/D
CONVERSION, 30: FIXED STATION PORTION OSCILLATOR PORTION, 31,
32, 33, 34: MIXER, MIXER MIXER MIXER 36: 90 DEGREES PHASE SHIFT,
25 51, 52, 53, 54: PHASE SHIFT, PHASE SHIFT PHASE SHIFT PHASE

SHIFT 50: CALCULATION CONTROL, 60: INPUT, 110: ADDER, 111:
ADDER, 112: MULTIPLIER, 115, 116: PHASE SHIFTER, DEMODULATION
SIGNAL S_1 , 117: LOOP FILTER, CARRIER WAVE PHASE CORRECTING
SIGNAL S_c , 100: BEAM DIRECTION CONTROLLING PORTION

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